ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

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FENISECA TARQUINIUS.

Our illustration shows one aspect of the chrysalis of this interesting species. It was photographically enlarged from a drawing made by Mrs. Mary Peart for Mr. W. H. Edwards' "Butterflies of North America." The species is a carnivorous one, the larvæ feeding on plant lice.

———o———

AROMATIC BUTTERFLIES.

By W. F. FOOTE, Most Yard, N. H.

Scudder, in his "Butterflies of New England," speaks of several species as being aromatic, but I do not think that he mentions *Debis portlandia* in this respect. This species is quite common in this immediate locality, and is the most aromatic butterfly with which I am acquainted, far exceeding *Argynnis atlantis*. I had noticed a peculiar, but not unpleasant odor upon opening my cyanide jar, but it was some time before I traced it to *portlandia*. I have frequently taken this species on the sugaring patches when making my rounds just before dusk with fresh

sugar. It is an early as well as a late flyer, appearing soon after sunrise on the eastern borders of woods, and as the day advances retreating into them. In the middle of the day it may be found around patches of sunlight in thick woods, and when possible it loves to congregate around some moist place in a wood-road where the cart wheels have turned up the rich, damp mould. In one such locality I have frequently started up eight or ten usually in company with several *Satyrus alope* and *nephele*.

One afternoon while collecting along a wood-road I flushed a fine specimen of *Grapta j-album*. I gave chase, and, after a time, thinking I saw my chance, made a stroke and missed. The butterfly startled struck out a bee-line for space when, to my surprise, a large dragonfly attacked, and, after a brief struggle, overpowered it. Folding back its victim's wings this terror of the insect world settled on a pine limb about ten or twelve feet from the ground, there to suck its juices. In this object it was defeated, for a club, suddenly starting from the ground near my feet, struck the branch on which it was resting, whereupon it dropped its prey uninjured from an entomological point of view and made off. I have frequently seen smaller butterflies captured in this manner, but never before one so large and powerful.

Perhaps the most social butterfly in this locality is *Phyciodes nycteis*. I had always counted this species a great rarity until one day when I noticed a specimen while walking along a country road. I at once gave chase and captured it. A few steps farther along and another started up and before I had taken this two more were in sight. Before I captured these two I found myself surrounded on all sides by them. In a space less than a rod across I counted over forty, and perhaps there were twice that number besides in the immediate vicinity. There seemed to be no especial attraction as they were variously employed, some on the flowers of milkweed and dog-bane, some on mud, and many without apparent occupation of any kind.

Colias philodice and *Papilio turnus* frequently congregate in numbers after a rain, but in such cases evidently with a common purpose and not for the mere sake of each other's society. I once saw *Vanessa antiopa* in quantities under an apple tree in a cow-path where the apples had been crushed by passing cows.

NOTES ON EUROPEAN ENTOMOLOGICAL COLLECTIONS.

By PHILIP P. CALVERT.

VI.—VIENNA.

The Kaiserlich-Königlich. [Imperial-Royal] Naturhistorisches Hofmuseum in Vienna is probably the most magnificent building in the world devoted to the natural sciences, not only as regards its external appearance, but also by its elaborate interior decorations. Imposingly situated on the Burg Ring, it is the architectural counterpart of the Kunsthistorisches Museum on the opposite side of the Maria Theresa Platz. Dr. Franz Ritter von Hauer is Intendant, Dr. Franz Steindachner Director of the Zoological Collection, and the entomological staff embraces Dr. Friedrich Brauer Custodian (Diptera, Neuroptera), Messrs. Karl Kölbel (Arachnida, Myriapoda), Dr. L. Ganglbauer (Coleoptera, Orthoptera), F. F. Kohl (Hymenoptera), Dr. Anton Handlirsch (Hemiptera), Dr. H. Rebel (Lepidoptera).

The two lower floors are open to the public and comprise (below) the geological and mineralogical, (above) the zoological rooms; of the latter, a large and well-lighted section contains excellent systematic and biological illustrations of the Insects.

The important entomological collections are to be found on the uppermost floor in rooms between a central court and the north facade. Unfortunately the (north) light afforded by the few windows in the larger room is less than necessary. Thanks to the kindness of Dr. Handlirsch in gathering, and of his colleagues in furnishing the necessary data, the following list mentions the principal contents.

COLEOPTERA.

The Coleoptera collection comprises about 25,000 determined species in more than 300,000 specimens. Its richness consists chiefly of palæarctic, and especially of mid-European material, revised or determined by Dr. Ganglbauer in the preparation of his work on "Die Käfer von Mitteleuropa," each specimen being so labeled. The collection also contains numerous specimens of older date from the hands of Schaum, Hampe, Miller, v. Heyden, Chevrolat and others, and types of species described by Kollar, L. Redtedbacher and Ferrari. From Chevrolat's

collection were purchased the Paussidæ, Rhysodidæ and Eucnemidæ. Of recent years numerous species have been described from the collection by Reitter and Ganglbauer, Abeille de Perrin, Baudi, Escherich, Fairmaire, Heller, W. Horn, Kraatz, Kuwert, Joh. Schmidt, Schilsky, Aug. Schultze, Seidlitz and others.

ORTHOPTERA.

Types of Bormans, Brunner von Wattenwyl, Herm. Krauss, Josef Redtenbacher and H. de Saussure.

LEPIDOPTERA.

Old collections of Abbé Mazzola and Podeoin; later the entire collections of Ziegler, Baron Ransonnet, Schadenberg, Dorfmeister and others were acquired. Best represented are the palæarctic Microlepidoptera, contained in the rich collections of Mann and Rebel.

Types of Hübner, Treitschke, Kollar, Zeller, Mann, Lederer, Felder, Rogenhofer, Rebel, etc.

RHYNCHOTA.

The foundation of the collection was formed by those of Natterer and Schott from Brazil, Ulrich from Europe, Mann from Southern Europe, Bilimek from Mexico, and of the "Novara" expedition.

To these were added, in 1890, the great collections of Signoret (30,000 specimens) and of Löw (16,000 specimens), so that at present there are about 15,000 species and far more than 100,000 specimens here.

The chief value of the entire collection lies in the enormous number of types of Signoret, Löw, Mayr, Förster, Stal, Reuter, Spangberg, Distant, Bergroth, Berg, Puton, Horvath, Ferrari, Lichtenstein, Lethierry, Fieber, Frauenfeld, Sahlberg, Riley, Fitch, Uhler, Amyot, Hagen, Fowler, etc.

HYMENOPTERA.

Old collections of Winthem and Megerle.

Results of the "Novara" expedition, described by de Saussure, Mayr and Sichel.

Tschek's collection (types of Ichneumonidæ).

Collections of Kohl, Handlirsch, Kolazy.

Förster's collection of Ichneumonidæ.

Types of Handlirsch, Kohl, Mayr, de Saussure, Sichel, Reinhard, Förster, Giraud, Lucas, Mocsary, Friese, Morawitz, Schmiedeknecht, Konow, Stein and Ruthe, Tschek, Schletterer.

DIPTERA.

The so-called "Hauptsammlung" arranged by Schiner with numerous old, original specimens of Meigen, Wiedemann, Schummel and others; in great part revised by Brauer.

The collection of Winthem with types of Meigen, Wiedemann, Egger, Dr. Adam Handlirsch and T. Bergenstamm.

Part of Becher's collection.

Löw's collection of Cecidomyidæ.

The chief value of the collection is the great number of original specimens of Schiner, Brauer, Löw, Bergenstamm, Egger, Meigen, Rondani, Schummel, Wiedemann and many others.

NEUROPTERA.

Collection determined and arranged by Brauer, and contains types of this author as well as some of Hagen, de Selys, McLachlan, Pictet, Karsch, etc.

A Plea for an Improvement in Entomological Pins.

By Edw. A. Klages, Crafton, Pa.

The Feldman Collecting Social, at a recent meeting, having advocated the adoption, among collectors, of a uniformity in the length of pins, the writer regarding this of much importance, has taken advantage of the long desired opportunity of presenting some facts about the pins we now use, at the same time submitting tables showing what dimensions would be best suited for the different orders.

In insects, as a general rule, increase in size means increased length, breadth and thickness, hence it follows that, if for a small specimen, a thin pin of a suitable length will be correct; that for a larger specimen, a proportionately thicker and longer pin should be used. It is needless to say that pins made with this object in view would be best suited for all orders in which the thickness of the body varies to a considerable extent, like in the Coleoptera, but in orders where this variation is not so great,

such as the Lepidoptera, it may be best to use pins of a uniform length throughout, long enough, however, to answer for the largest.

The time dawns upon us when collections are of little value scientifically, in which the individual specimens have no other label except the name. Each pin supporting an insect should be long enough to also support two, or perhaps three data labels at a sufficient distance apart that they may be read without removal.

Through purchases and samples of pins received from several dealers, the writer has been enabled to carefully compare the leading makes. A rather singular thing in connection with this is that Carlsbader pins procured from different dealers vary greatly in diameter and manner of numbering. To make this apparent, the dimensions of pins procured from two dealers are appended.

Except in the case of the small sizes of the Klaeger japanned pins, in which a number are as much as 8 mm. short, the lengths given are about the average for each size. The diameters are given in even 2000ths of an inch, expressed decimally.

Schleuter Pins, black.

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.
1	.0125	in.	35
2	.0125		"
3	.014	.0015	"
4	.0155	.0015	"
5	.018	.0025	"
6	.02	.002	"
7	.0225	.0025	"
8	.025	.0025	"
10	.027	.002	"

Carlsbader Pins, bright.

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.
1	.0165	in.	37
2	.0185	.002	38
3	.02	.0015	37
4	.022	.002	"
5	.024	.002	"
6	.026	.002	"
7	.027	.001	"
8	.0275	.0005	41
9	.0285	.001	"
10	.0305	.002	"

Carlsbader Pins, bright; procured from another dealer.

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.
0	.0115	in.	38
1	.012	.0005	"
2	.013	.001	37
3	.0145	.0015	38
4	.0155	.001	"
5	.0185	.003	39
6	.019	.0005	38
7	.022	.003	"
8	.025	.003	"
9	.0255	.0005	"
10	.0275	.002	"

Klaeger Pins, bright; "35 mm. length."

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.
00	.0125	in.	33
0	.013	.0005	"
1	.014	.001	34
2	.017	.003	33
3	.0195	.0025	34
4	.023	.0035	35
5	.0265	.0035	"

Sizes larger that number 5 are similar to those of the "39 mm. length."

Klaeger Pins, bright; "39 mm. length."

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.
00	.013	in.	38
0	.0135	.0005	"
1	.0145	.001	"
2	.017	.0025	39
3	.02	.003	"
4	.0235	.0035	"
5	.0255	.002	"
6	.03	.0045	"
7	.0305	.0005	40
8	.034	.0035	"

Klaeger Pins, japanned; "35 mm. length."

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.
00	.013	in.	34
0	.013		"
1	.015	.002	35
2	.0165	.0015	34
3	.0195	.003	"
4	.0245	.005	35
5	.0265	.002	"
6	.0285	.002	42
7	.0285	.000	"
8	.0315	.003	"

With the exception of the Klaeger japanned pins, which are made of steel with a brass head, all of the above are made of brass-wire, either plated or japanned; the latter, if properly done, prevents corroding, which is a great advantage.

The writer's own experience goes to show that steel pins may not have as much spring as in some of the hard brass pins, but they are superior in stiffness, and not so liable to clinch on the point.

As a perusal of the above tables will show considerable variability and uncertainty in the individual grades, and inconsistency in the gradation, I would suggest as a standard the following table of dimensions:

Nos.	Diam. in.	Increase in diam. over preceding number.	Length mm.	Increase in length over preceding number.
1	.013	in.	35.	mm.
2	.015	.002	35.5	0.5
3	.0175	.0025	36.5	1.
4	.0205	.003	38.	1.5
5	.024	.0035	40.	2.
6	.028	.004	42.5	2.5
7	.0325	.0045	45.5	3.
8	.0375	.005	49.	3.5
9	.043	.0055	53.	4.

A uniform length of 38 mm. is suggested for such orders in which the body does not vary to a great extent. In this case the diameters should be the same as in numbers 2, 3, 4, 5, 6 and 7 in the above table.

It is to be hoped that entomologists will become aroused to the advisability of adopting a properly graded standard, and using no other. Manufacturers would no doubt undertake to supply the demand if entomologists can be induced to unite in this movement.

———o———

CARNIVOROUS LARVA OF MELANOTUS COMMUNIS.

By Frederic Ormonde.

Probably one of the most exhaustive series of experiments relative to the economy, life-history, etc., of the Elateridæ ever made in this or any other country, was that of Professors Comstock and Slingerland, of the Cornell Experiment Station, the results of which were given to the public in Bulletin 33 of that

station. Yet the only occasion suggestive of any carnivorous tendency noticed by them was a large larva of *Asaphes decoloratus* Say with a smaller one in its jaws,* which they suggest as being in all probability, accidental.

The special experiments, with the object of ascertaining any carnivorous habits, were all with negative results. They placed larvæ of *Asaphes decoloratus* and earth-worms together in a breeding-jar, but no such tendencies were seen. Experiments with *Melanotus communis* Gyl. likewise failed, as did those made with *Drasterius elegans* Fab.† The result of my own observations on the subject are as follows: Early in the season I found a number of the larvæ of several species among the decaying matter and refuse in the base of a hollow oak which I took together with an amount of the substance in which they were found. Upon my return home, not having any idea of their being devoured by one another, they were all placed in one breeding-cage. My surprise was very great, therefore, upon examining them the next morning to find one of the *Melanotus communis* gorging itself upon one of *Ludius* sp. The body had been severed at the third segment and the canabalistic individual was found with head and thoracic segments submerged within the body of its victim. These I immediately placed in alcohol as proof positive for future reference. I then placed in a separate cage another *M. communis* larva with one of a species unknown to me. On looking at these the following day all that remained of the undetermined species was the head, thoracic appendages, with a few fragments of the other segments. Having found, also, the larvæ of a species of *Uloma infirmis* Mels., I believe, with these in the same location I wished to see what would be the result of placing them together in the breeding-cage. As I expected, it was the same as before, and since then the carnivorous species have been in separate jars along with the material in which they were found. Several species of this family, in the larval form, are said to be carnivorous.

Dr. Riley reared *Hemirhipis fascicularis* Fab. from the larvæ preying on them of *Cyllene pictus* Drury; *Elater luctuosus* Lec. from larvæ that fed on those of *Dendroides canadensis* Latr. and *Cucujus clavipes* Fab.; *Melanotus communis* fed on the larvæ of

* Bulletin 33, Cornell Experiment Station, page 259.
† Bulletin 33, Cornell Experiment Station, pages 259, 263, 268.

Chrysobothris femorata Fab.* He has also found the larvæ of *Drasterias amabilis* Lec. preying on locust eggs.†

It will be observed that Dr. Riley's experiments were made with larvæ of other families, as the food, whilst with one exception, mine have been confined to the same as the devourer. The larval stages of this family present an ample field for study as at present comparatively little is known concerning them, a very grievous fact when their economic importance is taken into consideration.

For those who may wish to enter into a study of this family, I would suggest a close perusal of the before-mentioned Bulletin of the Cornell Station as well as the table of species to be found in the Eighteenth Report of Prof. S. A. Forbes, together with the synoptic tables of the family by Drs. LeConte and Horn.

RANK IN THE HETEROPTERA.—The common view that the aquatic bugs are of lower rank than the Scutelleridæ, etc. (see H. E. Summers, p. 81, Bull. Tenn. Exper. Station, July, 1891, vol. iv, No. 3), is not evident from a study of their characters. In fact, the reverse of the present order of succession of the families is the true gradation from the lower to the higher. Thus, the large head of *Corisa* and *Galgula*, the modified antennæ, the reduced number of joints in the tarsi and beak, as well as in the antennæ, the reduced size of the membrane of the hemelytra and the shorter abdomen, all indicate the high specialization and cephalization of the families hitherto considered the lowest. The true succession of families, from the lower to the higher, is Coreidæ, Nabidæ, Reduviidæ, Phymatidæ, Scutelleridæ, Nepidæ, Notonectidæ. The large scutellum of the water bugs and the position of the antennæ show their relationship to the Scutelleridæ, the high rank of both being evident from the small number of segments in the abdomen (the above was penned several years ago before the publication of Comstock's "Manual," where, p. 128, recognition is made of the high rank of the Scutelleridæ and Hydrocorisa, but without giving characters).—W. H. PATTON.

THE collection of native and foreign Lepidoptera made by the late Rev. J. G. Morris, of Baltimore, Md., is for sale. According to Prof. Uhler the collection is in very excellent condition. Many of the specimens were collected and mounted by Dr. Morris, who, at the time of his death, was probably the oldest entomologist in the United States. It would be a pity for this collection to go to destruction for want of care, and it should fall into the hands of some individual or institution where it would receive the care it merits.

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* First Report U. S. Entomological Commission, page 304.
† American Entomologist, vol. iii, page 247.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., SEPTEMBER, 1896.

THE meeting of the entomologists of New York, Philadelphia, Brooklyn and Newark on the fourth of July at the latter city was an interesting one in many ways. The people gathered together had in common a love for natural science, but differed in many other respects. Many trades and a number of professions were represented. The greater number were either German, or German descent, and if it were not for the interest taken in entomology by these people, who evidently inherited this taste from ancestors who derived their knowledge from the wisdom displayed in teaching German school children natural history, we would have little entomology in America. We hope to see the time when such studies will be taught in our schools. It was Gladstone who said the present fault of our school system is the lack of teaching in natural history.

WHILE not an author, the late Julius Flohr has been of assistance in aiding the accumulation of material for others, notably for the authors of the "Biologia." In his journeys between Mexico and England he never failed to visit Philadelphia to see the fine specimen of *Heterosternus buprestoides* in our cabinet which seemed to have an irresistible attraction. —G. H. HORN.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

The Army Worm, *Leucania unipuncta*, has formed the subject of many newspaper paragraphs in the Eastern States during the present Summer. It has appeared in destructive numbers in parts of New York, Pennsylvania, Massachusetts, New Jersey and other States, but was most serious in the two first named. Dr. Lintner writes that he has "record of it in 38 of the 56 counties, and it is probable that only the extreme northern counties were exempt from it." I have received word of its presence from several counties of eastern and central Pennsylvania, and newspaper accounts speak of it from more western points. In New Jersey it was reported from the more southern counties as early as May 26th as injurious to grain and grass; but it was exceedingly local, and after the middle of June nothing more was heard of it from the points first infested. Its injuries were comparatively slight, though, of course, severe to the farmers directly concerned. About the middle of July there was a very local outbreak in Atlantic County, but the principal complaints came during the latter part of June and early in July, from two or three of the northern counties. *Leucania unipuncta* is always a common insect throughout the eastern and central United States and seems, under ordinary conditions, to be very evenly distributed. The interesting feature in the New Jersey part of the outbreak is its extremely local character. A field here and there proves to be badly infested, while all intervening lands are clean. Near Egg Harbor City a single field only was attacked, though all about were others in much the same condition as to situation, character of crop and nature of rotation employed. So, also, I was surprised to note the differences in the amount of parasitic infestation in the specimens sent me. In some sendings every caterpillar had eggs of Tachinid flies attached to it; in others a small proportion or none at all were infested. The climatic conditions in New Jersey during the early Spring of 1896 were those accounted most favorable to this insect, *i. e.*, dry and warm. As to the remedial measures adopted, they were generally of the most perfunctory and unsatisfactory character. Some simply sat and wailed, others tried insecticides indiscriminately, a few gathered the crop as it was for fodder and somewhat under-ripe, and only in occasional instances was destruction of the infested field resorted to. Furrowing was resorted to in some cases, and in one instance a ditch was dug on low ground, until water stood in it and this effectually confined the creatures to their original point of infestation.

Mosquitoes were also the subject of much newspaper comment in the Metropolitan press, and in some places near New York they were certainly

excessively numerous. Of course this could be readily accounted for by the numerous heavy rains, keeping ditches, puddles and swamps full, and by the hot weather favoring the development of the low forms of animal and vegetable life upon which the mosquito larvæ feed. It is interesting to note that mosquitoes are becoming much more common in Southern California as one of the results of irrigation. Ditches, sluggish or partly choked, or little basins formed here and there, afford excellent places for them to breed. Prof. A. J. Cook has made the interesting observation at Clermont, Cal., that mosquito larvæ are able to stand considerable drying up without injury, and when, after a dry period the water supply is renewed, they resume their activity.

New Jersey has an enviable reputation for the quality of its mosquitoes, but I believe that the foreign product, on the plains of Manitoba, is superior in size, and at least equal in numbers and blood-thirsty disposition.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

WHILE collecting on the Humber Plains on the 11th of June with my friend, Mr. C. H. Tyers, we took a number of specimens of *Colias cæsonia*. This is the first time it has been taken in this locality and has only been once recorded from Ontario.—C. T. Hills, 18 Sussex Ave., Toronto, Canada.

THE Fifth Annual Excursion of the Entomologists of New York, Brooklyn, Newark and Philadelphia was held near Newark, N. J., on July 4, 1896, and was successful in every way. In spite of the disagreeable weather of the early morning a large party participated, and every one seemed to have thoroughly enjoyed the outing, which may aptly be called a social gathering. The following persons were present:—NEWARK: Bischoff, Stortz, Weidt, Reinicker, Seib, Betz, Brehme, Kircher, Angelman, Weier, Deitze. NEW YORK: Palm, Merkel, Dietz, Ottolengui, Beyer, Beutenmüller, Love, Schaeffer, Groth, Bennett, Soltau, Walker (Jamaica, L. I.), Fischer (Buffalo), Steffens (Shelton, Conn.). PHILA-

DELPHIA: Boerner, Schmitz, Skinner, Gerhard, Reinicke, Laurent, Johnson, H. Wenzel, E. Wenzel, Griffith, A. Hoyer, F. Hoyer, Trescher, Nell, Schneider, Castle, Fox, Mengel (Reading, Pa.).—F.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identificatien, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the anatomy of insects, however, whether relating to American or exotic species will be recorded.

1. Occasional Papers of the Natural History Society of Wisconsin, vol. iii.—Spiders of the family Attidæ from Central America and Mexico, G. W. and E. G. Peckham.

2. ZOOLOGISCHER ANZEIGER, No. 502.—On the secondary spiracles on the legs of Opilionidæ, J. C. C. Loman.

3. ANNALES DES SCIENCES NATURELLES, Zool. et Paleon. 8e serie, i, 4-6.—Study on locusts, J. H. Fabre.

4. JOURNAL OF THE CINCINNATI SOCIETY OF NATURAL HISTORY, xviii, Nos. 3, 4.—Catalogue of the Odonata of Ohio, pt. ii, D. S. Kellicott.

5. PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, 1896, pt. 1.—Report on extermination of tussock moth, H. Skinner and W. J. Fox.

6. VERHANDLUNGEN DES VEREINS FUR NATURWISSENSCHAFTLICHE UNTERHALTUNG ZU HAMBURG, 1894-1895.—Contribution to the knowledge of the Lepidopterous fauna of Rio de Janeiro, V. von Bönninghausen.

7. THE BOTANICAL GAZETTE, May, 1896.—Flowers and insects, xvi, C. Robertson.

8. TERMESZETRAJZI FUZETEK, BUDAPEST, xix, 2.—Contributions to a knowledge of the Hungarian Braconidæ, V. Szepligeti. A new enemy of the fir of the Class Insecta, G. Horvath.

9. BOLLETINO DEI MUSEI DI ZOOLOGIA . . . DELLA R. UNIVERSITA DI TORINO, vol. xi, No. 229.—Formicidæ collected by Dr. E. Festa in the vicinity of the Gulf of Darien, C. Emery.——Ibid. No. 230.—Some new ants of the genus *Azteca* Forel and biological notes, ibid.——Ibid. No. 232.—Orthoptera collected in Darien by Dr. E. Festa, i, A. Griffin.——Ibid. No. 234.—On an anomalous *Pristes tuberosus* collected in Darien by Dr. E. Festa, ibid.——Ibid. No. 239.—Travels of Dr. A. Borelli in the Argentine Republic and Uruguay, Odonata, R. Martin.——Ibid. No. 240.—On the Odonata collected by Dr. E. Festa in Darien and Cuenca, ibid.

10. ARCHIV FUR ENTWICKELUNGSMECHANIK DER ORGANISMEN, iii, 2.—An antenniform extra appendage in *Dilophus tibialis* Loew, W. M. Wheeler.

11. ARCHIVES DE ZOOLOGIE EXPERIMENTALE ET GENERALE, 1896, No. 1.—The production and evolution of the social wasps, P. Marchal.

12. PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON, 1895, pt. 4.—Report on the parasitic Hymenoptera of the island of Grenada, comprising the families Cynipidæ, Ichneumonidæ, Braconidæ and Proctotrupidæ, W. H. Ashmead, On the color variations of a beetle of the family Chrysomelidæ, statistically examined, W. Bateson. On the Orthoptera of the Sandwich Islands, B. v. Wattenwyl. On the classification of the Schœnobiinæ and Crambinæ, two subfamilies of moths, of the family Pyralidæ, G. F. Hampson.

13. PROCEEDINGS OF THE UNITED STATES NATIONAL MUSEUM, xviii [Extracts].—List of the Lepidoptera collected in Eastern Africa by Dr. W. L. Abbott, . . . W. J. Holland. Revision of the North American Empidæ—a family of two-winged insects, D. W. Coquillett.

14. PSYCHE, a journal of entomology, June, 1896.—*Neelus murinus*, representing a new thysanuran family, J. W. Folsom. New species of *Prosapis* (cont.), T. D. A. Cockerell. List of Mt. Washington Coleoptera, F. C. Bowditch.

15. MICHIGAN STATE AGRICULTURAL COLLEGE EXPERIMENT STATION, Bulletin No. 132.—Some injurious insects: climbing cutworms; control of the common granary insects; carpet beetles and clothes moth, G. C. Davis.

16. THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION, viii, 2.—The relationship of the lower Lepidoptera with Trichoptera, J. W. Tutt.

17. UNITED STATES DEPARTMENT OF AGRICULTURE (Division of Entomology), Technical Series, No. 4.—Some Mexican and Japanese injurious insects liable to be introduced into the United States: Introduction, L. O. Howard; Report of a trip to investigate insects of economic importance in Mexico, C. H. T. Townsend; Insects injurious to stored cereal and other products in Mexico, F. H. Chittenden; Notes and descriptions

of new Coccidæ collected in Mexico by Professor Townsend; A list of the scale insects found upon plants entering the port of San Francisco, A. Craw; Some Coccidæ found by Mr. Craw in the course of his quarantine work at San Francisco, T. D. A. Cockerell. Some new species of Japanese Coccidæ collected by O. Takahashi, ibid.——Ibid. No. 3.—Revision of the Nematinæ of North America, C. L. Marlatt.

18. ENTOMOLOGISCHE NACHRICHTEN, 1896, H. 9.—The Hollandidæ or W. J. Holland's Ethiopian Arbelidæ, F. Karsch.——Ibid. H. 11.—The mouth-parts of Rhynchota (Homo-Heteroptera), R. Heymons.

19. ILLUSTRIERTE WOCHENSCHRIFT FUR ENTOMOLOGIE, i, 2.—On Coccinellidæ and their varieties, A. Reichert. A new system of Muscidæ . . . (cont.), E. Girschner.

20. VERHANDLUNGEN DES NATURFORSCHENDEN VEREINES IN BRUNN, Bd. xxxiii.—Revision of the coleopterous genus *Danacæa* Laporte of the palaearctic fauna, J. Prochazka. Analytical table of the bark-beetles (Scolytidæ) of Europe and surrounding countries, E. Reitter.

21. THE CANADIAN ENTOMOLOGIST, June, 1896.—The larger species of *Argynnis* and the mystery of their life-history, H. H. Lyman. *Trychosis tunicula-rubra* n. sp., T. W. Fyles. The Coleoptera of Canada, xvi, H. F. Wickham. Five new bees of the genus *Calliopsis*, T. D. A. Cockerell. New Hampshire Hesperidæ, W. F. Fiske. On two interesting new genera of scale insect parasites, L. O. Howard. The mutillid genus *Chyphotes*, T. D. A. Cockerell. A moth out of place, J. A. Moffat. ——Ibid. July.—The Coleoptera of Canada, xviii, H. F. Wickham. Notes on some moths from the collection of Mr. A. Bolter, H. G. Dyar. Note on *Trigonogenius farctus*, E. A. Schwarz. The smaller bees of the genus *Andrena* found in New Mexico, T. D. A. Cockerell. *Lepyrus alternans* and *capucinus*, *Lixus fossus*, *Cremastochilus harrisii* and *Polypleuris nitidus*, J. Hamilton. Two new Hesperids, H. Skinner. Notes: *Colias cæsonia; Papilio ajax*.

22. THE ENTOMOLOGIST, June, 1896.—Fungi parasite on butterflies, J. C. Rickard. New experiments on the seasonal dimorphism of Lepidoptera (cont.), A. Weismann.

23. THE ENTOMOLOGIST'S MONTHLY MAGAZINE, June, 1896.—An annotated revision of the British Chrysididæ (concluded), F. D. Morice. Supplement to "A Synopsis of British Psychodidæ," A. E. Eaton. On the structure and development of the lepidopterous wing, D. Sharp.

24. The Gypsy Moth, *Porthetria dispar* (Linn.). A report on the work of destroying the insect in the commonwealth of Massachusetts . . . , by Edward H. Forbush and Charles H. Fernald, 8vo, Boston, 1896.

25. Nineteenth Report of the State Entomologist on the noxious and beneficial insects of the State of Illinois, S. A. Forbes (relates chiefly to experiments for the extermination of the chinch bug).

26. Tenth Report of the New York State Entomologist for 1894 [Extract].—The scorpion flies, E. P. Felt.

27. Annales de la Societe Entomologique de Belgique, xl, 5.—The ants of tropical America, A. Forel. Analytical key of the genera of the family Formicidæ for the determination of the neuters, C. Emery Revision of the species of the genus *Ulocerus* Dalman, A. Senna.—— Ibid. xl, 6.—Descriptions of new genera and species of Phytophagous Coleoptera obtained by Mr. Andrews in India, M. Jacoby.

28. Bihang till Kongl. Svenska Vetenskaps-Akademiens Handlingar, xx, 4.—Researches on Arachnida from Java and adjacent places, . . . with descriptions of new South Asiatic and South American species, T. Thorell. The Myriapod fauna of Cameroons, C. O. von Porat.

29. Bulletin de la Societe Zoologique de France, xx, 3.—Descriptions of some Lower Californian spiders forming part of the collections of Dr. Geo. Marx, E. Simon.

30. Annales and Magazine of Natural History, June, 1896.—On some Odonata of the subfamily Aeschnina, R. McLachlan.

31. Natural Science. London, June, 1896.—The meaning of metamorphosis, A. Hyatt and J. M. Arms.

32. Journal of the New York Entomological Society, June, 1896.—New species of Heterocera, W. Schaus. The phosphorescent organs of insects, A. S. Packard. The probable origin and diffusion of North American species of the genus *Diabrotica*, ii, F. M. Webster. On the probable origin of the Pericopidæ: *Composia fidelissima* H.-S., H. G. Dyar. The larva of *Syntomeida epilais* Walk., ibid. Food-habits of North American Cerambycidæ, W. Beutenmüller. Note on the geographical distribution and mimicry of *Apatela*, A. R. Grote. Correction of the type of *Agronoma* and note on *Laspeyria*, ibid. Note on *Enæmia crassinervella* Zell. (*Mieza igninix* Walk.), A. T. Slosson. A description of the larva found by Mrs. Slosson, H. G. Dyar. New Californian spiders, N. Banks. Note on the head setæ of lepidopterous larvæ, . . . H. G. Dyar. Desiderata of North American Notodontidæ, A. S. Packard.

33. Biologisches Centralblatt, xvi, Nr. 11.—By what means do flowers attract insects, F. Plateau.

34 Bulleptino della Societa Entomologica Italiana, xxvii, 3, 4. —Hymenopterological note (note 3), G. Gribodo.

35. Transactions of the Entomological Society of London, 1896, pt. 2.—Notes on pupæ: *Orneodes*. *Epermenia*, *Chrysocorys* and *Pterophorus*, T. A. Chapman. Descriptions of new genera and species of Coleoptera from South Africa, . . . L. Péringuey. Descriptions of new Scolytidæ from the Indo-Malayan and Austro-Malayan regions, W. F. H. Blandford. Notes on *Dyscritina longisetosa* Westw., E. E. Green. On the courtship of certain European Acridiidæ, E. P. Poulton.

36. MEMOIRES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, T. iii. —A list of Tenebrionidæ supplementary to the "Munich" Catalogue, G. C. Champion.——Ibid. T. iv.—Revision of the Dytiscidæ and Gyrinidæ of Africa, Madagascar and neighboring islands, M. Régimbart.——Ibid. T. v.—Ichneumonidæ of Africa, J. Tosquinet.

37. BERLINER ENTOMOLOGISCHE ZEITSCHRIFT, xli, 1.—New contribution to the knowledge of the group Epidosis, J. J. Kieffer. Enumeration of the Histeridæ collected in Brazil by Prof. F. Sahlberg, J. Schmidt.

38. JOURNAL OF THE TRINIDAD FIELD NATURALISTS' CLUB, ii, 12.—Two Embidæ from Trinidad, H. de Saussure. On a small collection of Coccidæ from the island of Grenada, T. D. A. Cockerell.

39. ZOOLOGISCHER ANZEIGER, No. 505.—The postembryonal development of the oviducts and their accessory glands in the female sexual apparatus of *Bombyx mori*, E. Verson.

40. ARCHIV FUR MIKROSKOPISCHE ANATOMIE UND ENTWICKELUNGSGESCHICHTE, xlvii, 3.—On the structure of the nuclei in the spinning-glands of larvæ, E. Korschelt. On cell-membrane in the spinning-glands of larvæ, ibid.

41. THE AMERICAN NATURALIST, July, 1896.—The asymmetry of the mouth-parts of Thysanoptera. A new African Dilopod related to *Polyxenus*, O. F. Cook.

42. MORPHOLOGISCHES JAHRBUCH, xxiv, 1.—On the morphology of the abdominal appendages in insects, R. Heymons.

43. BULLETIN OF THE AMERICAN MUSEUM OF NATURAL HISTORY, viii [Extract].—Critical review of the Sesiidæ found in America, North of Mexico, W. Beutenmüller.

44. Elementarcurs der Zootomie in fünfzehn Vorlesungen, B. Hatschek und C. J. Cori, 8vo, Jena, 1896 (the twelfth lecture is devoted to the anatomy of *Periplaneta orientalis*, and is accompanied by two fine plates; lecture thirteen on *Hydrophilus piceus* L.).

45. Yearbook of the United States Department of Agriculture, 1895.—The shade-tree insect problem in the Eastern United States, L. O. Howard. The principal insect enemies of the grape, C. L. Marlatt. Preparation and use of insecticides, Anonymous.

46. TRANSACTIONS OF THE ACADEMY OF SCIENCE OF ST. LOUIS, vii, 6. —Flowers and insects, C. Robertson.

47. ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE, lxi, 3.—To a knowledge of the epidermal sense organs and the sensory nervous system of the Arthropoda, O. vom Rath.

48. Bulletin of the United States Geographical Survey, No. 124.—Revision of the American fossil cockroaches, . . . S. H. Scudder.

49. PROCEEDINGS OF THE LINNEAN SOCIETY OF NEW SOUTH WALES, x, 3.—Australian Termitidæ, pt. i, W. Froggatt.

50. DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT, 1896, i.—Correct determination of the position of some genera of Cassidæ, J. Weise. Description of new species of *Cassida* and synonymical remarks, ibid. *Hadronigidius*, new genus of Lucanidæ from Africa, G. Kraatz. New Cetomidæ from East Africa, . . . ibid. Buprestidæ from the Zanzibar region . . . , ibid. New species of Elateridæ, O. Schwarz. Javanese enemies of the sugar-cane of the family Rhynchota, G. Bredden. Contribution to the knowledge of the fauna of German East Africa, J. Faust. *Cyrtocerus*, new East African genus of the Prionidæ, G. Kraatz. *Laberoschema*, new genus Cyrtophagidæ, E. Reitter. Review of the genera and species of Coleoptera allied to *Penthicus* Feld., known to me, ibid. Description of a new genus of weevil from German East Africa, F. Hartmann.

51. ANNALS AND MAGAZINE OF NATURAL HISTORY, July, 1896.—Descriptions of some new genera and species of Heterocera from Central and Tropical South America, H. Druce. On some new Pierine butterflies from Columbia, A. G. Butler. On a new generic distinction between the scorpions of the genera *Scorpio* and *Palamnæus*, R. I. Pocock. The bees of the genus *Andrena* found in New Mexico, T. D. A. Cockerell. Observations on some Buprestidæ from the West Indies and other localities, C. O. Waterhouse. New species of Pyralidæ from the Khasia Hills, W. Warren.

52. MITTHEILUNGEN AUS DEM ROMER MUSEUM, Nr. 6.--The Saturniidæ, A. R. Grote.

53. ANNALS OF THE NEW YORK ACADEMY OF SCIENCE, ix, 1-3.—The Craspedosomatidæ of North America, O. F. Cook and G. N. Collins.

54. BULLETIN OF THE MUSEUM OF COMPARATIVE ZOOLOGY, xxix, 5.—The development of the wing scales and their pigment in butterflies and moths, A. G. Mayer.

55. HORÆ SOCIETATIS ENTOMOLOGICÆ ROSSICÆ, xxix, 1, 2.—Contributions to a monograph of the Coniferæ lice i, N. Cholodkovsky. Entomological miscellany; On the question of the spinning-glands of Tenthredinid larvæ, V. Pickel; To a knowledge of the glandular hair of the nun-moth (*Oeneria monacha* L.), I. Ingenitzky; On the squirting apparatus of the Cimbicid larvæ, N. Cholodkovsky.

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Doings of Societies.

PHILADELPHIA, June 30, 1896.

A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H. W. Wenzel, 1509 S. 13th Street.

Members present: Messrs. Bland, Boerner, Castle, Johnson, E. Wenzel, Trescher, Seiss, Laurent, Hoyer, Fox, H. W. Wenzel and Schmitz. Honorary members: Drs. Geo. H. Horn and Henry Skinner. Visitor: Mr. Frank Hoyer. Meeting called to order at 8.45 P.M. President Bland presiding. For the committee on 4th of July meeting Mr. Fox, in the absence of the chairman, reported that circulars had been forwarded to the different societies, and that the returns seemed favorable for a large meeting. On motion the committee was continued.

Mr. H. W. Wenzel read a communication received from Prof. Smith, dated Marysville, California, June 2d, after which he exhibited an interesting species of Lampyrid, *Lamprohiza reticulata*, taken in the mountains of western North Carolina. Both sexes were shown, the females being wingless and of a whitish color. Mr. Wenzel said he would make further remarks on some of the species captured later on, as he had not looked over the material carefully which he had taken on his recent southern trip.

Dr. Horn exhibited his collection of Oedemeridæ, which has cost him so much trouble in the past year, stating that the mimicry of species caused considerable difficulty in determining their genera.

Mr. Laurent exhibited a representative collection of Lepidoptera collected by Dr. Castle and himself in Florida; also the gopher and gopher insects which they had excavated.

Mr. Frank Hoyer was unanimously elected a member of the Social.

No further business being presented the meeting adjourned to the annex at 10.30 P.M.

THEO. H. SCHMITZ, *Secretary*.

American Entomological Society.

PROCEEDINGS OF MEETINGS.

APRIL 23, 1896.

A regular meeting of the American Entomological Society was held this evening, President Dr. George H. Horn in the chair. The Publication Committee reported in favor of publishing the following papers in the "Transactions" of the Society: "On the

Species of Bembidium of America North of Mexico," by Roland Hayward; "A Classification of the Geometrina of N. America, with Descriptions of New Species," by Dr. G. D. Hulst; "The Lamiinæ of North America," by Chas. W. Leng, with "Notes and Descriptions," by John Hamilton, M.D.; "Revision of the Genera and Species of Ceutorhynchini inhabiting North America," by W. G. Dietz, M.D. Mr. Hayward made some remarks upon the species of Bembidium contained in the paper presented for publication this evening. Dr. Horn complimented Mr. Hayward upon the work done in the preparation of the paper. Dr. Griffith said he had been to Atlantic City for a week, and for the early part of the season had done considerable collecting, getting a number of Cicindela, Scarabæides and Longicorns. At Longport he had taken about thirty specimens of Hemiptera. Dr. Horn remarked that he had often noticed that in the early warm days of Spring it was usual to find flies in large numbers, but that during the last warm spell he had seen none. Mr. Seiss said that on April 14th he had taken from the stomach of a blue-winged teal some specimens of *Donacia æqualis* and *Hydrovatus pustulatus*. Mr. H. W. Wenzel and Mr. Lancaster Thomas were elected members of the Society.

JUNE 25, 1896.

Meeting held this evening Dr. Horn, President, in the chair. The Publication Committee reported in favor of publishing the following papers in the "Transactions" of the Society: "New Neuropteroid Insects," by Nathan Banks; "The Bees of the Genus Halictus found in New Mexico," by T. D. A. Cockerell. Dr. Horn addressed the meeting upon the subject of the spiracles of Coleopterous insects. He said they had not been used in classification excepting by Burmeister in the Melolonthidæ. In the Laparosticts they were placed in the membrane between the ventral and dorsal segments of the abdomen. In the Pleurosticts they are gradually divergent in the Melolonthidæ and suddenly divergent in the second group. In the Laparosticts it is claimed by some that they all have a membranous ligulæ, while the Pleurosticts have a corneous ligulæ, with which conclusions he did not agree, as there are some species of Lamellicorns which do not meet the expectations from such claims. Mr. Wm. J. Fox was elected Librarian of the Society.

JAMES H. RIDINGS,
Recording Secretary.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

A New Species of Tropidia (Syrphidæ) and Note on the Generic Position of Melanostoma rufipes Williston.

By W. D. HUNTER.
(Assistant in Entomology, University of Nebraska.)

NORTH AMERICAN SPECIES OF TROPIDIA.

1.—Antennæ black, or nearly so, posterior coxæ of male without spur, dorsum without pollinose markings, scutellum without yellow border; third antennal joint of moderate size. Abdomen with two small reddish spots on anterior corners of the second and third segments; venter largely red. Legs black. **nigricornis** n. sp.

Antennæ yellow, or at most reddish brown . . . . . 2.

2.—Posterior femora of male at base with a strong process, four anterior tibiæ yellow. Abdomen with two interrupted bands; antennæ light ochraceous, dorsum shining blackish bronze . . **mamillata.**

Posterior femora of male without such basal process . . . . . 3.

3.—Antennæ very large, posterior coxæ of male with large obtuse spur. **calcarata.**

Antennæ moderate, not reaching the epistoma . . . . . 4.

4.—Scutellum with yellow margin, face covered with pollen; middle and anterior tibiæ yellow; dorsum of thorax with median pollinose markings . . . . . **quadrata.**

Scutellum without yellow border, face shining black. Legs black; dorsum without median pollinose markings . . . . . **incana.**

Tropidia nigricornis n. sp.—Front and vertex shining black with short yellow pile, longer on the vertex; frontal triangle in male silvery sericeous, face in both sexes opaque, less densely sericeous. Face indistinctly obliquely wrinkled, sharply carinate, in male vertical below the antennæ, in female distinctly concave; antennæ black in the female, tinged with reddish in the male; third joint of moderate size, subquadrate, usually obliquely truncate on the outer side; dorsum of the thorax blackish bronze, shining, without pollinose markings, covered with short reddish yellow pile; pleuræ shining, sparsely grayish pilose; scutellum shining black. Abdomen in the female shining black, with a pair of small reddish spots on the anterior corners of the second and third segments; posterior margins of the segments except the first, whitish; last segment short, whitish pilose. In male as in female, except that more or less of segments one, two and three, are opaque. Legs black; middle and anterior knees yellow, all the tarsi slightly tinged with brownish; posterior femora with the usual process, coxæ without spur. Wings hyaline, projecting beyond the tip of the abdomen; venter, except part of first and last segments, bright blood-red (in unfaded specimens). Length 8–8.5mm.

Described from thirteen female and five male specimens taken at Moscow, Idaho, in May, by Prof. Aldrich.

This species is quite distinct from the described species of *Tropidia*, which are included below in the dark antennæ and legs and the absence of the coxal spurs. The pile of the thorax and scutellum indistinctly longer than in *T. incana* Twnds. according to Mr. Snow, who has kindly compared them for me.

1. *nigricornis* n. sp.
2. *mamillata* Loew, Centur. i, 68, 1861.
3. *calcarata* Will., Synopsis, 208, 1886.
4. *quadrata* Say, Amer. Ent. i, viii, 1824; ibid. Comp. Wrts. Lec. i, 14.
5. *incana* Townsend, Trans. Am. Ent. Soc. 1895, 52.
6. *albistylum* Macquart, Dipt. Exot. 2e, Suppl. 60, i, tab. 2, fig. 10, Will. Syn. 207; ibid. Ent. News, 1892, 146.

Melanostoma rufipes Will.

The generic position of this species has been doubtful owing to the fact that only the female has been described, and that the only character separating *Melanostoma* from *Platychirus* lies in the anterior tarsi of the male. Dr. Williston says, "Until the male of this species is known its position is somewhat doubtful. Its relationship to *Chilosia* is very strong, but the distinctly banded abdomen would seem to remove it from that genus; possibly it is a *Platychirus*."

I have had the opportunity of examining specimens from the collection of Prof. Aldrich that remove all doubt on this point. The anterior tarsi of the male are not at all dilated, hence Dr. Williston's provisional location of this species in *Melanostoma* is the correct disposition of it. It cannot be a *Chilosia* as there are no traces of the lateral facial sutures that characterize that genus.

These specimens show several differences from the description in color; in fact none of them agrees exactly, but I am unable to discover any substantial structural differences, and hence conclude that this species like the others of the genus is very variable.

———o———

ALCIDAMEA PRODUCTA Cress. AND ITS PARASITES.

By A. Davidson, M.D., Los Angeles, Cal.

This is one of the more common bees of this district, and may be found over a wide range of territory, nesting freely wherever convenient sites are to be found from the plains around Los Angeles to at least 5000 feet altitude in the Tehachapi Mountains.

It prefers as a nesting site the broken twigs of the elder tree or fennel plant, burrowing from the end in the medium sized branches. The burrow when completed seldom extends more than six or seven inches into the branch, and is usually four lines wide. In the typical nest the cells as shown in the illustration are crowded together at the bottom, while on the top of and usually contiguous to the outermost cell are alternating layers of pith and clay, the former evidently gathered from the sides of the burrow above, as that part is wider than the section occupied by the cells. Near the entrance to the burrow the opening is further obstructed by a series of clay partitions with the intervals between filled with pith as in the other. The partitions are somewhat peculiarly constructed, both the upper and lower being fashioned on the same plan. The lower usually has a layer of pith next the cell of a thickness varying from one-half to one-eighth of an inch, on top of which is a disc of clay one-half line thick, then one-eighth of an inch of pith and another disc, etc. The outer defence is wholly constructed of alternating layers of clay discs and pith differing only from the deeper one in being begun and finished with a clay disc. The cells measuring 6 by 3 lines are closely packed together at the bottom of the burrow, only a thin clay disc such as is used in the partitions, one line in thickness intervening between each.

In the specimens kept under observation the bees hatched out at various dates from March 15 to April 12.

The parasites affecting them were four in number, the most common being *Cryptus albitarsis* Cress. which affected 25 per cent. The cocoons of *Cryptus* are in shape exactly similar to

those of their host, but possess a thinner, almost diaphanous wall.

Sapyga aculeata Cress. affected 7½ per cent.

Photopsis? affected 5 per cent.

Stelis sexmaculata Ashm. affected 5 per cent. The cocoons of this species are all somewhat alike in texture, are 4 lines long, of an oblong shape, with rounded ends and of a gray opaque color. Appended is Mr. Ashmead's description of this new species.

STELIS Panzer.

Stelis 6-maculata Ashm. n. sp. ♀.—Length 5 mm. Black, clothed with a griseous pubescence, denser on pleura and face; the first, second and third abdominal segments each with two oblong white spots. Wings subfuliginous, the second recurrent nervure almost interstitial with the second transverse cubital nervure. Head opaque, closely punctate; thorax and abdomen also punctate, but shining.

Comes nearest to *S. fœderalis* Smith, which, however, has only two white spots on the abdomen.

———o———

NOTES ON THE WHITE CALLIMORPHAS.

By HARRISON G. DYAR.

Mr. O. D. Foulks has sent me some of the *Callimorpha* mentioned as *C. vestalis* on page 298 of the November number of the NEWS. They prove to be *fulvicosta*, and the specimens grade into *reversa* and not *lecontei*. The series now before me suggests a change in the synonymy given by Mr. Neumoegen and myself (Jour. N. Y. Ent. Soc. i, 159–161). At that time we did not recognize *vestalis*, but wrongly identified the form as *fulvicosta*, and consequently renamed the true *fulvicosta* as var. *duplicata*. Mr. Foulks' specimens are *H. reversa*, var. *duplicata*, N. and D., but the recognition of *vestalis* will correct the synonymy as below. I differ from Mr. Lyman and Prof. Smith (see Check List, 1891) in not considering three white forms, *consita*, *fulvicosta* and *vestalis* as of specific rank. That they are varieties is proven in the case of *fulvicosta* by Mr. Foulks' specimens, and is indicated in the case of *vestalis* by examples from Mr. J. S. Faaborg, of Clinton, Iowa.

The larvæ of only two species of *Haploa* are known with any certainty, and it is to be hoped that special efforts will be made to discover the rest.

1. **Haploa clymene** Brown.
interrupto-marginata de Beauvois.
comma Walker.

Larva bright yellow with white lateral stripe, mottled along its upper edge with bright red; the anal end faced with red markings (Siewers).

These observations are so far without corroboration. If correct, the larva is very distinct.

2. **H. colona** Hübner.
carolina Harris.
clymene Esper.
var. **conscita** Walker.
lactata Smith.

Dr. Riley found the larva on oak, but we have no other evidence about it.

3. **H. reversa** Stretch.*
suffusa Smith.
var. **fulvicosta** Clemens.
duplicata Neumoegen and Dyar.

Larva black, a bright yellow dorsal and stigmatal stripe, the latter centered with a broken black band (Saunders, Riley).

The two published descriptions correspond. The stigmatal band is apparently broken by black in the manner of the European *dominula*.

4. **H. confusa** Lyman.

Larva black, yellow dorsal, stigmatal and subventral lines, the latter broken into dots and partly obsolete (Lintner, Lyman, Dyar).

My observations agree with those of Mr. Lyman. Dr. Lintner's description is too brief for certain recognition.

5. **H. lecontei** Guerin.
var. **confinis** Walker.
var. **militaris** Harris.
var. **vestalis** Packard.

Larva black, with rich yellow dorsal and lateral lines (Strecker).

Prof. Smith refers the moths bred from these larvæ to *militaris*. The statements about their hybrid origin seem confusing, and there is a possibility of misidentification. We must await further

* By rule of priority this must be known as *fulvicosta* with *reversa* as variety. The species differs from *colona* only in the secondaries being white instead of yellow, and these forms may not be specifically distinct.

observations on *clymene* and *lecontei* of which they were said to hybrids.*

6. **H. contigua** Walker.

The larva seems entirely unknown. By the rule of priority this must be known as *fulvicosta* with *reversa* as variety. The species differs from *colona* only in the secondaries being white instead of yellow, and these forms may not be specifically distinct.

A NEW SUBFAMILY OF EPHYDRIDÆ.

By D. W. Coquillett, Washington, D. C.

In a very interesting collection of Diptera recently captured by Mrs. Annie T. Slosson in southern Florida and submitted to the writer for names are two specimens of a hitherto undescribed form allied to the Ephydridæ, but differing from all of the known species by the entire lack of long bristles, and by the unusually short antennal arista. The absence of a spur on the second antennal joint and of bristles on the outer side of the middle tibiæ, taken in connection with the hairy eyes, would throw this form in the subfamily Hydrellina, but the entire absence of bris-

Lipochæta slossonæ Coq.

tles, the usually short antennal arista and the short face, will necessitate the erection of a new subfamily, for which the name *Lipochæta* is proposed (from the Greek λειπ, without, and χαιτε, seta). The principal characters of this new form are as follows:

LIPOCHÆTA n. gen.

Entire insect destitute of long bristles. Head as broad as the thorax, in profile longer than high; eyes protuberant, round,

* Since the above was written Dr. Packard has published a description of the stages of *H. lecontei* as far as the hibernation period (Jour. N. Y. Ent. Soc. iii, 176). Unfortunately, the descriptions of the later stages are very brief, but what is stated seems to confirm Strecker's description quoted above.

densely short pilose; face scarcely one-eighth as long as the front, clypeus projecting nearly the length of the face, oral opening one and one-half times as wide as the front; cheeks at least one-half as wide as the eye-height; antennæ shorter than the transverse diameter of either eye, bent outwardly and partly concealed in cavities in the face; first joint minute, the second broader than long, the third hemispherical, narrower than, but nearly as long as the second; arista dorsal bare, shorter than the third antennal joint, unusually robust, less than three times as long as broad; scutellum subconical, one-fourth as long as the thorax. Abdomen elongate oval, nearly as wide as and about as long as the thorax, composed of five segments. Legs slender, claws large, curved, pulvilli well developed; auxiliary vein wanting, second basal cell wanting, hind cross-vein slightly more than its own length from the tip of the fifth. Type, the following species:

Lipochæta slossonæ n. sp.—Black, the halteres and tarsi yellow; densely whitish pollinose, the front except next the eyes, dorsum of thorax and of scutellum grayish brown pollinose. Wings whitish hyaline, veins brown, the third and fourth strongly converging toward their tips. Length 2.5 mm.

Punta Gorda, Fla. Two specimens from Mrs. Annie T. Slosson, who writes that she took seven specimens which were flying over mud.

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Three new Bees of the Genus Calliopsis from Colorado.

By T. D. A. Cockerell.

Calliopsis bakeri n. sp. ♂.—Length 5 mm., of slender build, wholly black, except that the tarsi become dark brown, the mandibles rufescent at tips, and the clypeus is entirely very pale yellow. Head rather large, rounded, slightly broader than long, face somewhat narrowing below, hindmost ocelli nearer together than the distance of either from the orbit; head throughout with large, close punctures, sparse, however, on clypeus. Lower corners of face and cheeks with long white hairs; scape with long brownish hairs; antennæ long, wholly black; mesothorax and scutellum with small, close punctures, pleura with larger, sparse punctures; postscutellum pubescent, base of metathorax minutely lineolately sculptured. Claws cleft only at tips; tegulæ shining, very dark brown. Wings smoky, nervures and stigma dark brown, second submarginal cell narrowed a little more than half to marginal. Abdomen with the first segment smooth and shining, sparsely punctured; the other segments with a basal, dull, minutely roughened portion, then a punctured portion, and then a smooth portion.

Hab.—Colorado: Chamber's Lake, Larimer County, 9500 feet, July 18, 1895 (C. F. Baker). Known by the yellow color being confined to the clypeus; in this it is like *C. californicus*, but in that the clypeus is not all yellow.

Calliopsis innuptus n. sp. ♀.—Length 6.5 mm., stoutly built, black, the face-marks yellow, and the tarsi reddish brown. Head somewhat broader than long, coarsely and confluently punctured, the punctures more sparse on vertex, and especially lower part of face; hindmost ocelli if anything a little further apart than the distance of either from the orbit; antennæ rather short, wholly black, second joint of flagellum remarkably short; a longitudinal keel between the antennæ; clypeus and lateral face-marks bright chrome-yellow, the clypeus with the usual two dots; the lateral marks subquadrate, shaped something like the mainsail of a schooner, but narrower, extending considerably above level of clypeus, but not to level of antennæ, notched on the inner lower corner; the clypeus is not grooved; face practically free from hairs, but the lower margin of the clypeus has a sparse fringe; eyes dull sage-green. Thorax wholly dark, with tolerably profuse, short, dirty whitish pubescence; punctures of mesothorax and scutellum very large and fairly close; base of metathorax obliquely striate; tegulæ shining testaceous. Wings hyaline, slightly milky, nervures and stigma brown, costal nervure black, marginal cell hardly at all appendiculate, second submarginal narrowed about one-half to marginal. Legs black, knees and tarsi, and a short streak on anterior tibia, reddish brown; scopa of hind legs comparatively short and inconspicuous. Abdomen broad, apical margins of segments becoming narrowly testaceous, first segment with large, rather sparse punctures, the other segments with a transverse median punctured area.

Hab.—Colorado: Colorado Springs, middle of July, 1895 (Ckll. 3580). Also found by Mr. C. F. Baker (1593).

Another from Colorado Springs has the face more hairy and the second submarginal less narrowed above. This is quite distinct from *C. coloradensis*, *lepidus*, *andreniformis* and *maculatus*, the only four species with a partly light face and wholly dark abdomen in the ♀. It may possibly be the ♀ of some species so far only known in the ♂. It resembles the ♂ of *albitarsis* more than does the ♀ of that species.

Calliopsis renimaculatus n. sp. ♀.—Length about 5.5 mm., black, with a yellow spot on the face, form rather stout. Head broader than long, face very broad, not narrowed below; front and vertex shining, with large close punctures; occiput, cheeks and face with rather copious short white hairs; no acute keel between the antennæ; clypeus flat, not grooved; face wholly dark, except a transverse bright chrome-yellow kidney-shaped spot, half on clypeus and half supraclypeal, its convex side downwards;

antennæ rather short, black, with the last joint wholly, and joints 7 to 10 beneath, a lively red-brown. Thorax with fairly abundant grayish pubescence on border of prothorax, on pleura, postscutellum and sides of metathorax; mesothorax with shorter and less conspicuous pubescence; mesothorax and scutellum with very distinct, moderately close punctures, those on anterior part of scutellum much smaller and closer; base of metathorax feebly longitudinally wrinkled, the area behind shining, but minutely sculptured; tegulæ shining testaceous. Wings hyaline, with a slightly yellowish tint, nervures and stigma reddish brown, costal nervure black, second submarginal cell quite long, narrowed about one-half to marginal. Legs black, very hairy, a pale yellow spot at base of anterior and middle tibiæ, terminal joints of tarsi becoming more or less rufescent; first joint of hind tarsi produced into a comb-like structure at tip. Claws bifid at tips, the inner tooth much the shortest. Abdomen with white pubescence above, quite dense, except on dorsum of first segment and middle of posterior half of second, which are bare. The pubescence becomes much denser towards the tip, and is slightly tinged with reddish about the pygidium; dorsum of first segment impunctate.

Hab.—Colorado: Fort Collins, on *Solidago canadensis*, Aug. 15, 1895 (C. F. Baker). Easily recognized by the kidney-shaped mark on face.

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A NEW DRASTERIA.

By Beverly Letcher.

Drasteria livida n. sp.—Head, thorax and primaries concolorous: abdomen and secondaries. Above, the primaries have the usual *Drasteria* markings in varying shades of brown on a light blue ground, the whole wing being irrorate more or less with brown; subapical spots very distinct; secondaries light blue with black terminal line and white fringes, sometimes basally a dark shade extending along inner margin, and in one instance from base to middle of median cell, otherwise immaculate. Beneath, both wings same light blue as secondaries above, the costal and outer margin of primaries slightly and the whole of the secondaries moderately irrorate with brown.

Hab.—California.

Described from two specimens, ♂ and ♀, taken by the writer in Siskiyou County, and a series of seven or eight (exact locality not known) in the collection of Dr. Behr, whose manuscript name I take pleasure in applying.

While this species resembles closely, in description, *D. cærulia* Grt., it requires but a glance to establish its right to at least a varietal, if not a specific name. Its larger size, its generally lighter shade, the slope of the t. a. line which forms a more acute

angle with the inner margin and the denser irrorations below are distinctive. The dark shade on secondaries above is far from prominent, the impression conveyed without closer examination being that the wings are, without markings, a brilliant blue.

OBITUARY.

Mr. JOHN B. LEMBERT was lately found murdered in his lonely cabin on the Merced River in California.

"There is no more enchanting mountain valley in California than the Tuolumne meadows, 9000 feet above the level of the sea. It was here that Lembert built his cabin and staked off a quarter section in the center of the valley, on the margin of the grass, and a matter of seventy-five yards from the fine soda spring which all travelers remember, some with pleasant thoughts, others with wry faces. Who he was or where he came from I do not know. I have asked these questions of many persons who were acquainted with him—some as intimately as it was possible to become with John Lembert—but evidently he had never told them.

"In the summer and until late in the fall the Tuolumne meadows are a paradise. Save for an occasional storm, which is over in no time, it is one long spring day. Birds and bees and butterflies and myriads of insects—some not altogether welcome—make their home here, and many kinds of flowers bloom in succession, not only in the meadow, but through the forest and on the loftiest crags. Here the old man lived alone, eating enough to sustain life and studying the fauna and flora. When his money ran low—and he never had much—he would catch some butterflies, rare in other altitudes, and send them "below" to Eastern museums, to Berkeley and later to Stanford. He got little for these specimens, but Lembert could live on almost nothing.

"He was a fair all-round naturalist, but entomology was his specialty, and butterflies his passion. Some of these have been named after him. He possessed many of the standard works on these subjects, and also some general literature, but in the latter he had evidently exhausted his interest by frequent perusal, for he became intoxicated with delight on occasionally being given books or magazines by visitors to the meadows. In recent years many of the university students stopping at the soda spring donated him what reading matter they might happen to have with them, and afterward sent him more from the Yosemite or from their homes. He was a man evidently of some attainments. His language was faultless, and his command of Latin—of which he seemed somewhat proud—indicated a thorough classical education."

The theory has been advanced that Lembert was murdered by the Yosemite Indians in revenge for the desecration of their ancient graves while in search for ethnological material for the Smithsonian Institution. He was well known to Eastern entomologists, especially those interested in Lepidoptera, to whom he sent many rare species.

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